ABSTRACT OF THE DISCLOSURE

A catalyst system composition comprising a chromium compound supported on a silica-titania support, wherein said catalyst system has been reduced with carbon monoxide, and a cocatalyst selected from the group consisting of i) alkyl lithium compounds, ii) dialkyl aluminum alkoxides in combination with at least one metal alkyl selected from the group consisting of alkyl zinc compounds, alkyl aluminum compounds, alkyl boron compounds, and mixtures thereof and iii) mixtures thereof can be used to polymerize olefins to produce a low density polymer with a decreased melt index and/or high load melt index. This catalyst system also can be used with a Ziegler-Natta catalyst system to polymerize olefins. Polymerization processes using these catalyst system compositions are also provided. Polymers resulting from polymerization processes using the inventive catalyst and cocatalyst systems have a decreased high load melt index, decreased melt index, increased fluff bulk density, and are useful as components to make bi-modal molecular weight resins for film and/or blow molding applications.